

Atty. Docket No.: 11CX-124155

**REMARKS**

Claims 1-12 are currently pending in this application. Claim 1 is independent.

**Rejection Under 35 U.S.C. § 112, first paragraph**

Claims 1-12 are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make or use the invention. In particular, the Office Action expresses uncertainty as to “how the changing of the speed of the roller and film causes the demetallization to change relative to the pre-printed image (i.e., in register) since the location of the demetallization pattern is fixed relative to the pre-printed web”. The rejection is respectfully traversed as follows.

In the printing field, it is known to index various rollers relative to a moving web. In this regard, paragraph [0022] of the specification sets forth that,

*The application of the registration information is determined by a simple computer software program which causes the servo motor 11 to spin faster or slower depending upon the registration information. The servo motor 11 then adjusts the speed of the demetallization station roller 10 and thus the speed at which the web 40 travels in order to ensure that the demetallization occurs exactly where designed in relation to the original images.*

As set forth above, the Office Action expresses uncertainty as to “how the changing of the speed of the roller and film causes the demetallization to change relative to the pre-printed image (i.e., in register) *since the location of the demetallization pattern is fixed relative to the pre-printed web*” (*emphasis added*). However, the present invention does not disclose that the demetallization pattern is fixed relative to the pre-printed web 40. As would be appreciated by one of ordinary skill in the art of printing systems, by adjusting the speed of the demetallization roller 9, the demetallization roller 9 is displaced either slightly forward or backward with respect to the pre-printed web 40. In this manner, the speed of the demetallization roller 9 is adjusted in order to properly index the demetallization roller 9 with respect to the pre-printed web 40. Such indexing adjustments made by adjusting the speed of one or more rollers are conventional and readily understandable by one of ordinary skill in the art of printing systems, as illustrated below.

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By way of example, U.S. Patent No. 5,615,609 ("the '609 patent") teaches a system and method for controlling the registration of a multi-unit printing press, including a master AC motor that drives a master printing unit, and a master AC driving device that is electrically coupled to the master AC motor for controlling the speed of the master AC motor. In operation, a master pulse generating device produces output pulses relating to the rotary motion of the master printing unit. A follower AC motor drives a follower printing unit, and a follower AC driving device electrically coupled to the follower AC motor controls the speed of the follower AC motor relative to the master AC motor. A follower pulse generating device produces output pulses relating to the rotary motion of the follower printing unit. The system further include a controller which is configured to receive the output pulses from the master and follower pulse generating devices, process the master and follower output pulses to produce control commands based on said output pulses, and transmit the control commands to the follower AC driving device so that the speed of the follower AC motor is adjusted relative to the master AC motor as required to maintain synchronized operation between the master and follower AC motors. This configuration maintains precise registration of the multi-unit printing press over the entire range of speeds of the multi-unit printing press and when the multi-unit printing press is temporarily in a non-running state.

Claim 1 of the '609 patent recites a *system for controlling the registration of a multi-unit printing press* including a *controller* configured to receive the output pulses from the master and follower pulse generating devices, process the master and follower output pulses to produce control commands based on said output pulses, *and transmit the control commands to the follower AC driving device for adjusting the speed of the follower AC motor relative to the master AC motor as required to maintain synchronized operation between the master and follower AC motors so that precise registration of the multi-unit printing press is maintained* over the entire range of speeds of the multi-unit printing press and when the multi-unit printing press is temporarily in a non-running state (*Emphasis added*). In addition, claim 6 recites that *the controller compares the master output pulses against the follower output pulses and produces the control commands for adjusting the speed of the follower AC motor when there is a deviation between the compared output pulses* (*Emphasis added*). Moreover, claim 7 recites

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*that the controller includes means for electronically adjusting the registration of the printing units with respect to one another while the printing press is in operation (Emphasis added).*

The website, howstuffworks.com, sets forth that "(r)egistration is the alignment of the printing plates as they apply their respective color portion of the image that is being printed. If the plates do not line up perfectly, the image will appear out of focus and the color will be wrong. *A computer takes a video image of registration marks that have been placed on the press sheet. Each plate has its own individual mark. The computer reads each of these marks and makes adjustments to the position of each plate in order to achieve perfect alignment. All of this occurs many times per second while the press is running at full speed (Emphasis added)* (See, <http://science.howstuffworks.com/offset-printing4.htm>)

In view of the above, it is submitted that it is well within the capabilities of one of ordinary skill in the printing arts to understand how the changing of the speed of the roller and film causes the demetallization to change relative to the pre-printed image. Accordingly, Applicant respectfully requests that the rejection of claims 1-12 under 35 U.S.C. §112, first paragraph be withdrawn.

#### **Rejection Under 35 U.S.C. § 103(a)**

Claims 1-12 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,959,120 to Wilson ("Wilson") in view of U.S. Patent No. 5,128,779 to Mallik ("Mallik") and further in view of U.S. Patent No. 4,745,288 to Hurley et al. ("Hurley").

The present invention is directed to a method for selective demetallization of a web material, comprising the steps of: (1) providing a web material having thereon an preplaced image and a registration mark and coated with a metal film; (2) conveying the web material to a demetallization station comprising a demetallization roll including indexing means for adjusting location of the demetallization roll; (3) prior to passage of the web material through the demetallization station, observing the registration mark with observation means and in response to such observation causing the indexing means to move the demetallization roll to align the

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demetallization roll to be in register with the web material; and (4) passing the web material through the demetallization station with the image in register with the demetallization roll; whereby predetermined portions of the metal film are removed or thinned to create or reveal visual elements of the web material in registration with the image. The preplaced image may be an ink printed image or an optical registered holographic image instead of a holographic wallpaper (continuous) pattern.

Wilson discloses a selectively demetallized metal film in which the metal film has different amounts of metal removed in different areas to provide a film having a graduated optical density from one area to another. The amount of metal present in the film can vary gradually and continuously or in stages resulting in a series of bands or patches. The product is produced by providing a substrate such as plastic film having a thin semiconductive metal film coated thereon. Different amounts of the metal are removed from the film in different areas, preferably by exposing the metal film in different areas to different amounts of an etchant which can be provided in the form of minute droplets of one size in one area and of a different size in a different area.

Wilson relates to demetallizing metallized film or paper webs with a continuous demetallizing pattern. However, Wilson does not involve demetallizing in register to a pre-printed image on a web, nor does it involve the use of holographic materials. In this regard, the Office Action correctly indicates that Wilson does not show the use of a web having a pre-printed image. Additionally, Wilson fails to disclose providing a web material having thereon a preplaced image *and a registration mark* and coated with a metal film (*emphasis added*). Moreover, Wilson does not teach *observing the registration mark* with observation means and in response to such observation *causing the indexing means to move the demetallization roll to align the demetallization roll to be in register with the web material* (*emphasis added*).

The Office Action applies Mallik to cure the numerous deficiencies of Wilson. Mallik teaches non-continuous reflective holograms or diffraction gratings for authenticating documents, and for decorative and product packaging applications. In contrast to the principles of Applicant's invention, Mallik pertains to a pair of substrates, wherein a first substrate is a holographic web that has a wallpaper holographic pattern embossed onto it rather than a

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registered holographic image. The second substrate contains pre-printed (with ink) information that will be viewable through the holographic substrate after it has been partially metallized and once it has been attached to the other using some type of adhesive and laminating procedure. Mallik does not involve holographic registered images and registering these images in register to the pre-printed images on the other substrate. Instead, Mallik employs a wallpaper holographic repetitive design with repetitive metallic areas such as dots or circles. The metallic repetitive areas do not register in relation to the holography because both the holography and the metallic areas are wallpaper patterns.

Mallik fails to cure the numerous deficiencies of Wilson. Specifically, Mallik fails to teach: (1) providing a web material having thereon a preplaced image *and a registration mark* and coated with a metal film (*emphasis added*); and (2) *observing the registration mark* with observation means and in response to such observation *causing the indexing means to move the demetallization roll to align the demetallization roll to be in register with the web material* (*emphasis added*). Additionally, Wilson and Mallik are not properly combinable as suggested by the Examiner. In particular, by combining the teachings of Mallik with those of Wilson, the functionality of the resultant system would be destroyed. Specifically, Wilson is directed to the use of a single substrate having a thin metal film, whereas Mallik pertains to a pair of substrates (wherein a first substrate is a holographic web and the second substrate contains pre-printed ink that will be viewable through the holographic substrate). More particularly, Applicant respectfully asserts that it is not feasible to combine Wilson's process of producing a metal coated article (including providing the substrate having a thin metal film) and Mallik's method of making non-continuous holograms (including providing a holographic web substrate and a pre-printed ink substrate). To the extent that the Examiner disagrees with this assertion, Applicant respectfully requests that the Examiner set forth how these disparate references would be combined and how the resultant device would appear and function. Moreover, it is substantially unclear how Wilson's substrate having a thin metal film would be combined with Mallik's holographic web substrate and pre-printed ink substrate to produce a system that obviates the claimed invention.

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The Office Action applies Hurley to cure the deficiencies of Wilson and Mallik. Hurley discloses a registration controller for sensing the presence and location of registration marks on a web as the web passes a scanner, and for generating a signal for use in controlling downstream operations such as cutting and/or printing operations. Although Hurley relates to sensing registration marks, it generally has nothing to do with demetallization. It follows axiomatically that Hurley does not involve the adjustment of a demetallizing roller in order to match the pre-printing. Furthermore, Hurley does not disclose providing registration between the pre-printing and a demetallizing roller, as required by the claims of the present invention. Moreover, Hurley clearly fails to disclose observing a registration mark with observation means, and in response to such observation, causing the indexing means to move a demetallization roll to align the demetallization roll to be in register with the web material, as recited by independent claim 1. Hurley, therefore, fails to cure the deficiencies of Wilson and Mallik.

In view of the above, it is respectfully submitted that claims 1-12 are not rendered obvious by Wilson in view of Mallik and further in view of Hurley.

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**Conclusion**

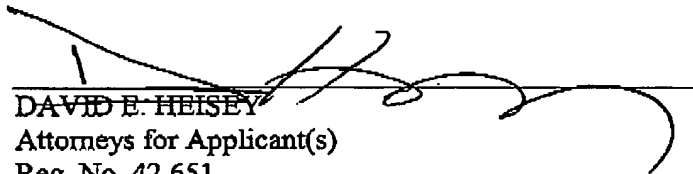
Applicant respectfully submits that claims 1-12 are currently in condition for allowance. The Commissioner is hereby authorized to charge any fee required or refund any overpayment to our Deposit Account No. 19-1853 in the name of Sheppard, Mullin, Richter & Hampton. Should any issues remain unresolved, the Examiner is invited to telephone the undersigned.

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Respectfully submitted,

SHEPPARD MULLIN RICHTER & HAMPTON LLP

By



DAVID E. HEISEY

Attorneys for Applicant(s)

Reg. No. 42,651

c/o SHEPPARD MULLIN RICHTER &  
HAMPTON LLP

12544 High Bluff Drive, Suite 300

San Diego, California 92130-3051

Telephone No.: (858) 720-8936